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Toyota Motor Engineering &  
Manufacturing North America, Inc.  
1630 W. 186th Street  
Gardena CA 90248  
(310) 787-5500

Clerk of the Board  
California Air Resources Board  
1001 I Street  
PO Box 2815  
Sacramento, CA 95812

**October 24, 2012**

**Re: Toyota Comments on California Zero Emission Vehicle Regulation**

Toyota is committed to advanced technology vehicles. We are the hybrid leader with 13 models representing more than 60% share of the hybrid market in 2013. Toyota offers the Prius Plug in Hybrid, RAV4 EV, iQ EV and in 2015 or sooner, are targeting launch of our Fuel Cell Vehicle. We are also committed to continue to work with the Board to understand how these vehicles are performing in the market, and appreciate the Board's strong support for the development of hydrogen infrastructure to enable the successful launch of the Fuel Cell Vehicle market in California.

With this in mind, Toyota submits these comments to the proposed amendments to the ZEV regulations, included in the staff report issued September 2, 2013. In addition, we are requesting that staff accelerate their evaluation of technical and market progress in earnest in 2014 so that we can be in a position by the first quarter of 2015 to make regulatory adjustments, if necessary. Considering the availability of market data on a wide variety of BEVs and PHEVs on sale today, we believe a better understanding for how this fast-changing market is evolving, as well as how manufacturers are improving the technologies and reducing costs, can only help to inform the Board about how best to move forward. We also incorporate by reference the comments of the Alliance of Automobile Manufacturers dated October 22, 2013.

**Comments on Proposed Amendments**

**1) Proposal to adjust the optional Section 177 state compliance path as committed to by the Section 177 states and the manufacturers:**

Toyota supports staff's proposed amendments to the Section 177 (S177) Optional Compliance Path to conform the regulatory language to the agreement reached between the large volume manufacturers and the S177 states prior to the January 2012 Board hearing. We believe that your proposed language allowing 2012-2017 credits to be transferred between regional pools reflects this agreement.

**2) Proposal to maintain a minimum ZEV credit requirement, regardless of model year and use of non-ZEV credits earned in the regulation:**

Toyota does not support staff's new proposal to introduce an aggregated cap on manufacturers' use of non-ZEV alternatives to help meet the ZEV requirement after 2018. Toyota continues to support the level of flexibility in the current regulation not only because it will encourage early and meaningful action that achieves ZEV program goals, but also because we believe this flexibility is essential for meeting the dramatic increase in overall requirements of the program, particularly after 2018. We also disagree with the rationale underlying this proposed change -- that the value of alternatives is fundamentally less than that of pure ZEVs. In particular, Toyota believes that so-called "transitional" ZEVs (i.e., PHEVs), may likely deliver greater aggregate air quality, greenhouse gas reduction and fuel switching benefits over the coming decade than other ZEV alternatives.

**3) Proposal to modify the fast refueling definition to exclude range accumulation through battery exchange:**

Toyota supports the clarification of the fast refueling definition as proposed by staff. We believe that the extra credits afforded to fast refueling should reflect the benefits of fast refueling for every refueling event and should only apply to the primary refueling method of the electric vehicle (as originally intended). Fast refueling credits also promote the goals of the ZEV regulation by incentivizing Fuel Cell Vehicles with the recognition of the importance of co-development of vehicles with the H2 infrastructure network. It is also important to note that the refueling interface used by Fuel Cell Vehicles is standardized and the refueling network can be used by all manufacturers, supporting the development of the whole industry.

**Differences Between California and the Section 177 States**

As outlined in the Alliance comment, manufacturers are introducing a wide range of plug-in vehicles. These vehicles are typically eligible for up to \$7,500 in federal tax credits and up to an additional \$2,500 under California's Clean Vehicle Rebate Program. Beyond these government programs, OEMs are further incentivizing many of these vehicles, as well as marketing and pricing them aggressively. Toyota is committed to work with CARB staff, EPA and the Section 177 (S177) States to develop actions to improve the market situation in the S177 States. But, even if incentives and infrastructure in the S177 States can be brought up to CA's level, it remains unlikely that PEV sales in most S177 states will reach rate of sales seen in CA in the near future. Sales of hybrid vehicles in the S177 average about half the rate as in CA, even though infrastructure is not an issue for conventional hybrids. Toyota believes that there is a fundamental difference in market demand for "environmental" vehicles between California and the majority of S177 states. Additionally, sales in S177 states may be impacted by differences in climatic conditions and housing stock that impact vehicle performance and opportunity for charging.

**Request for Accelerated Review**

Toyota continues to support the goal of the ZEV Program to commercialize ZEV technologies. To that end, we are working *globally* to help create a mass market for advanced technology vehicles. However, current sales volumes and trends of PHEVs and BEVs suggest that the volume requirements, particularly post-2018, are not realistic, and also do not reflect either the cost reduction opportunities or likely market acceptance we can reasonably expect during this timeframe. To this end, Toyota recommends that the staff and Board reinstate a more formal assessment process for regular review of both technology and market development of ZEV and

near ZEV technologies with the next one completed no later than early 2015. In the past, this has taken the form of biennial reviews and outside expert technical panels. We believe processes like these have allowed ARB and its stakeholders to assess and improve the ZEV Program, and are particularly critical in the realm of advanced ZEV technologies.

Toyota looks forward to the opportunity to work with staff and the Board in the coming year.

If you have any questions or comments, feel free to contact Michael Lord at (310)787-5644 or [michael.lord@tema.toyota.com](mailto:michael.lord@tema.toyota.com).

**Sincerely,**

A handwritten signature in blue ink that reads "Kevin D. Webber". The signature is fluid and cursive, with the first name "Kevin" being the most prominent part.

Kevin Webber, General Manager  
Vehicle Regulation and Certification Engineering